Diascund Reservoir
2008

Diascund Reservoir is owned by the City of Newport News and borders both James City County and New Kent County. The Virginia Department of Game and Inland Fisheries, with agreement from the City of Newport News and James City County, built a public boat ramp, courtesy pier, and parking lot located off of Route 603 near the town of Lanexa. The reservoir is 1,110 acres in size and has a number of large creek arms. The reservoir has plenty of interesting contour and structure. Several small islands, numerous large points, and bridge crossings all add to the extreme variability of the topography. The use of outboard engines is prohibited on Diascund Reservoir. The use of trolling motors is permitted. Anglers might want to make sure that they have two fully charged batteries if they plan on making long trips toward the upper reaches of the creek arms.

The Virginia Department of Game and Inland Fisheries conducted an electrofishing survey of Diascund Reservoir on April 2, 2007. The last electrofishing survey was on April 21, 2006. The 2007 sample was concentrated in 6 different regions of the reservoir to get a broad spectrum of the fish assemblage present. The water temperatures varied 18.3 to 21°C. An extremely hot week of weather warmed the shallow areas quickly. Electrofishing efforts consisted of shocking along the shoreline habitat as close as possible, with the majority of the effort concentrated in the 2 to 4 foot depth range**.** Five of the sample sites were the same sites sampled during the 2006 survey. An additional site, located in a cove adjacent to the dam was added for the 2007 survey. A total effort of 2 hours of electrofishing yielded the collection of 18 fish species. This report will concentrate primarily upon the seven major fish species: largemouth bass, bluegill, black crappie, chain pickerel, bowfin, yellow perch, and redear sunfish.

Table 1. Summary of the April 2, 2007 electrofishing survey for the primary fish species of Diascund Reservoir.

Species	# Collected	Largest Length	Average Length
Largemouth Bass	173	22.6"	12.7"
Bluegill	394	7.3”	4.0”
Black Crappie	41	14.1”	9.5"
Chain Pickerel	52	23"	13.6"
Bowfin	34	30.3"	20.9"
Yellow Perch	71	7.6"	4.7"
Redear Sunfish	63	9.5"	6.3"

The largemouth bass population within Diascund Reservoir appears to be in decent shape and reasonably balanced. The overall size structure favors the presence of bass in the 11 to 19 inch range. A total of 173 largemouth bass were collected. The CPUE (Catch Per Unit of Effort) for largemouth bass was 86.5 bass/hr. This catch rate showed a serious improvement from 2006 (CPUE: 56 bass/hr). The catch rate of bass from the 2007 survey ranks right up there with one of the best samples ever recorded for Diascund Reservoir electrofishing. Table 2 provides some additional analysis of the bass collected from each sample run. The size distributions of the collected bass can be seen on the enclosed length frequency graphs.

Table 2. Largemouth bass abundance values for each sample run along with the average size, maximum lengths and CPUE.

Run #	1	2	3	4	5	6
# of bass	35	23	32	28	26	29
Average size	11.0"	13.2"	13.6"	12.9"	12.6	13.4"
Max size	17.4"	22.6"	19.8"	19.3"	19.8"	20.2"
CPUE bass/hr	105	69	96	84	78	87

Figure 1. Length frequency distribution of largemouth bass from the electrofishing survey of Diascund Reservoir on April 2, 2007 (N = 173, CPUE = 86.5 f/hr)

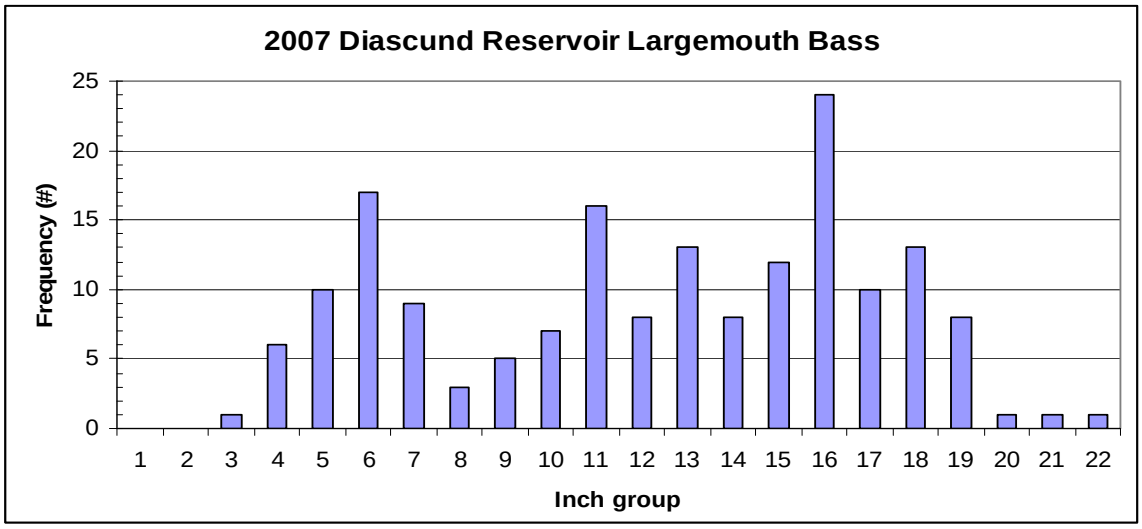
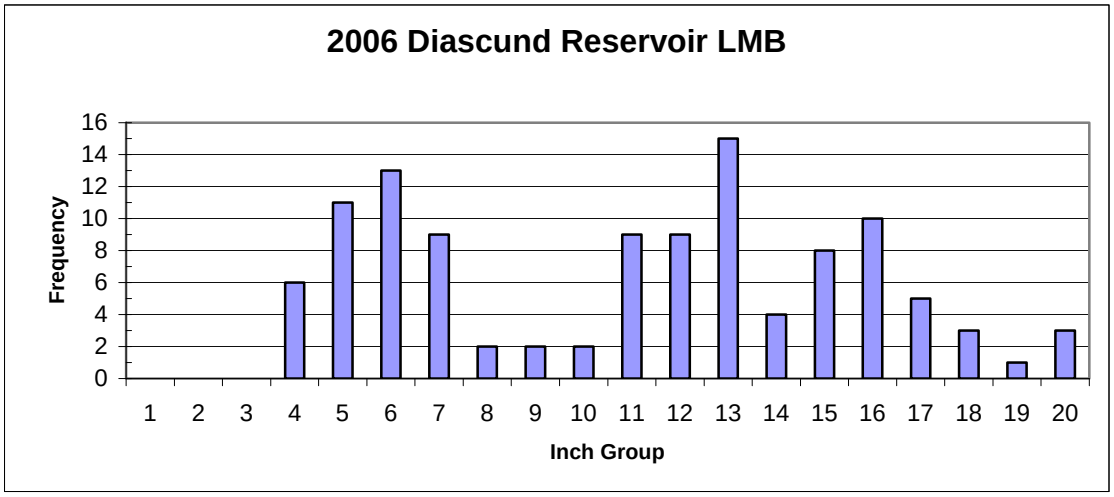


Figure 2. Length frequency distribution of largemouth bass from the electrofishing survey of Diascund Reservoir on April 21, 2006 (N = 112, CPUE = 56 f/hr)



The 2007 distribution showed a high proportion of bass in the 11 to 19 inch size range (112 of 173 bass, 64.7%). These bass will provide a great deal of the fishing excitement. The other abundant group of fish was the young bass in the 4 to 7 inch range (42 of 173 bass, 24.3%). This group most likely represents the good recruitment from the 2006-year class. The largest bass measured 22.6 inches and weighed 6.3 pounds. This fish was collected along the western bank of the Wahrani Swamp creek arm.

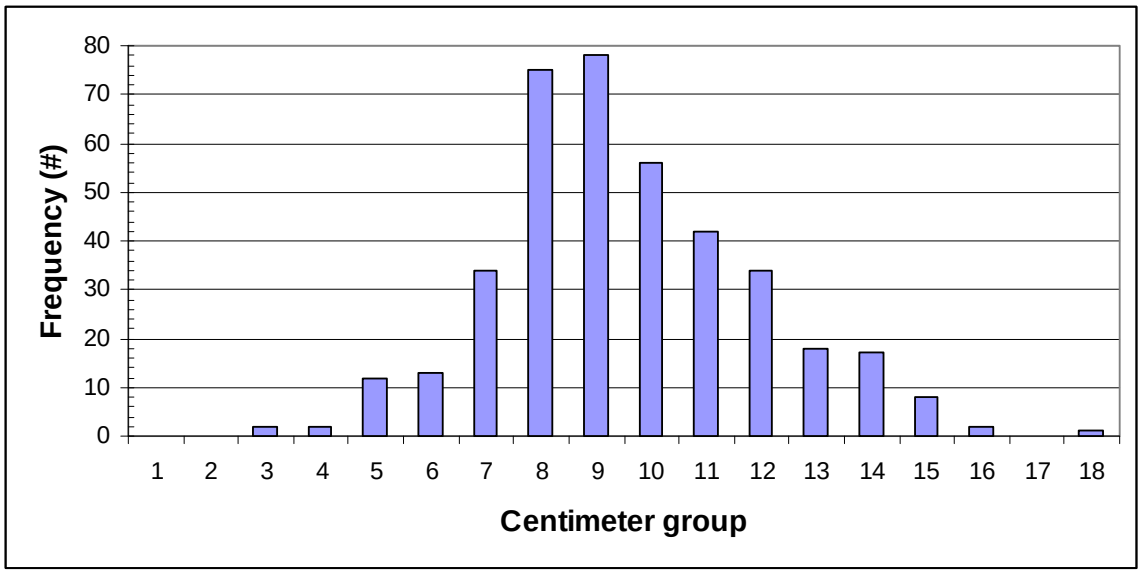
With largemouth bass being the most popular game fish in this country, it has been considered that a “preferred” bass is one that is over 15 inches in length. It is through this size classification that population dynamics are analyzed. The PSD (Proportional Stock Density) is the proportion of stock-sized bass (8 inches or larger) that are also equal to or greater than 12 inches (quality size). The sample showed an extremely high PSD value of 81, which is a direct reflection of the 106 quality-sized bass. The sample had a total of 131 bass that were stock size or larger. A balanced bass/bluegill fishery has a bass PSD value within the 40 – 70 range. The 2007 PSD value is exactly the same as the 2006 value. The RSD-P (Relative Stock Density of Preferred bass) is the proportion of stock-sized bass that are also equal to or greater than 15 inches in length. The 2007 RSD-P value of 54 is a direct reflection of the 71 preferred fish being collected. The abundance of bass greater than 15 inches in length helped to raise the RSD-P value well above the 2006 value (RSD-P: 41).

Weights were taken on largemouth bass to calculate relative weight values. Relative weight values are an indication of body condition. A value from 95 to 100 represents a fish that is in the healthy range and finding a decent amount of food. A higher relative weight value indicates fish with a better body condition. The 2007 relative weight values for stock, quality, and preferred bass (>8”, >12”, >15”) were 101, 102 and 102 respectfully. These relative weight values showed an increase from the 2006 sample (98, 98 and 96) and fall above the desired range of 95 to 100.

The sample revealed the bluegill fishery to be dominated by fish less than 6 inches in length. A total of 394 bluegills were collected over the course of two sample

runs (40 minutes). This CPUE of 591 bluegills/hr showed a major increase from the 2006 sample (145.3 bluegills/hr). All bluegills were measured by their corresponding centimeter group and are displayed as such in the length frequency graph. The average sized bluegill was around 4 inches in length. The PSD for bluegill is the proportion of bluegills over 3.15 inches (stock size) that are also at least 5.9 inches (quality size). Due to the number of smaller fish, the bluegill PSD was only 3. This PSD value is even less than the 2006 value (PSD: 7). The 2007 collection consisted of only 11 quality-sized bluegills in the 6 to 7.3 inch range. The PSD value is well below the desired 20 - 40 range that would represent a balanced bluegill population.

Figure 3. Length frequency distribution of bluegills collected from the electrofishing survey of Diascund Reservoir on April 2, 2007. (N = 394, CPUE 591/hr)

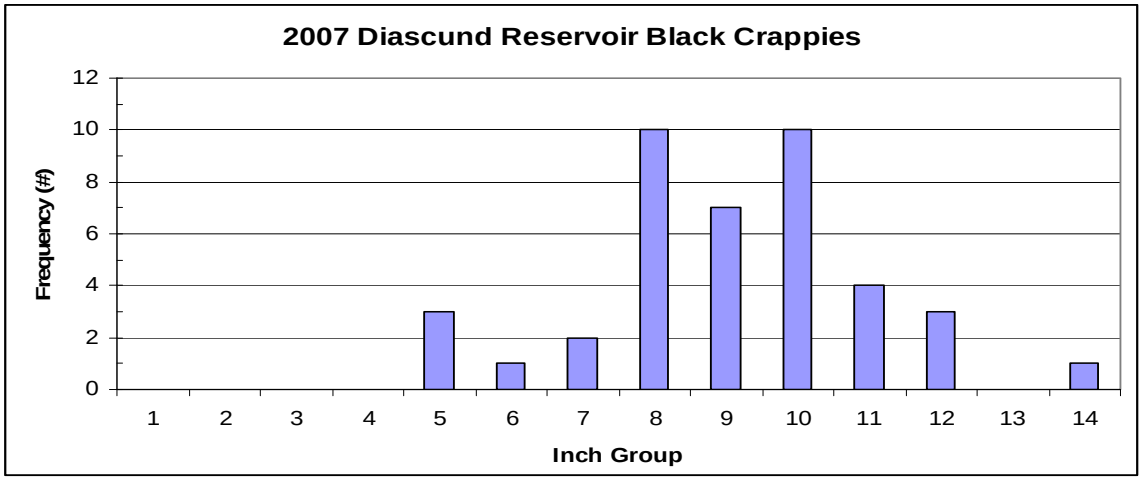


Trap net sampling was conducted on Diascund Reservoir on March 28-29, 2007. The main purpose of this type of sampling is to collect the schooling fish such as black crappies and yellow perch that target the shorelines as spawning season approaches. The western half of the reservoir was sampled with 10 trap nets. The warm water temperatures encountered on the second day forced the plans of sampling the eastern half of the reservoir to be cancelled. The water temperatures encountered during the trap net survey were around 70ºF along the shoreline. The trap nets were able to collect 18 species of fish. The nets were very successful in catching bluegills. A total of 1,120 bluegills were collected for a CPUE of 112 f/net night. This catch rate is less than the 2006 trap net survey that produced a total of 3,020 bluegills from 20 net nights (CPUE: 151 f/net night). The majority of the bluegills were in the 3 to 5 inch range. A total of 57 bluegills greater than 6 inches were collected. Only one bluegill greater than 8 inches was collected. The abundance of small bluegills offers a great prey source for the adult predators in the fishery.

The black crappie population appears to be in decent shape with majority of sample consisting of crappies in the 8 to 12 inch range. The electrofishing sample collected 41 black crappies for a CPUE of 20.5/hr. This catch rate showed an increase from the 2006 sample (CPUE = 13.5/hr). Black crappies tend to school in waters deeper

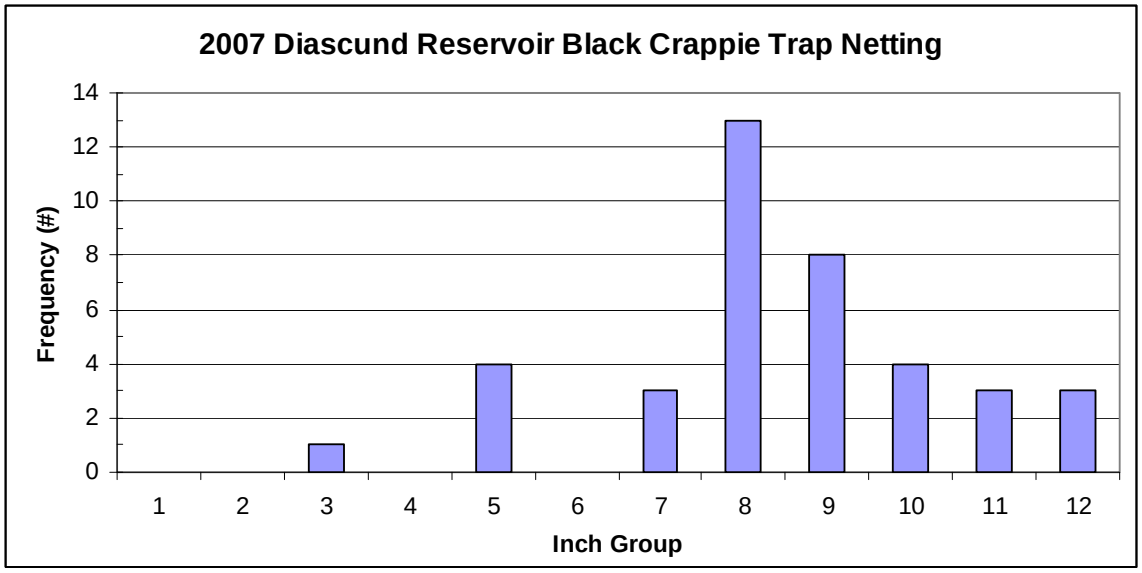
than bass and bluegills. Taking this into account, the typical shoreline sample can be very random as to whether or not a school is encountered during a sample run. The size distribution of the 2007 sample can be seen on the length frequency histogram. The largest black crappie measured 14.1 inches and weighed 1.7 pounds. Although the sample size was not extremely large, the average size crappie still measured 9.5 inches.

Figure 4. Length frequency distribution of black crappies collected from the electrofishing survey of Diascund Reservoir on April 2, 2007 (N = 41, CPUE = 20.5/hr)



The trap net survey collected a total of 39 black crappies (CPUE: 3.9 f/net night). This catch rate was much lower than the 2006 trap net survey. The 2006 survey was conducted during cooler water temperatures and yielded a higher catch rate of 228 black crappies for a CPUE of 11.4 crappies/net night. The majority of the 2007 sample consisted of crappies in the 8 - 10 inch range.

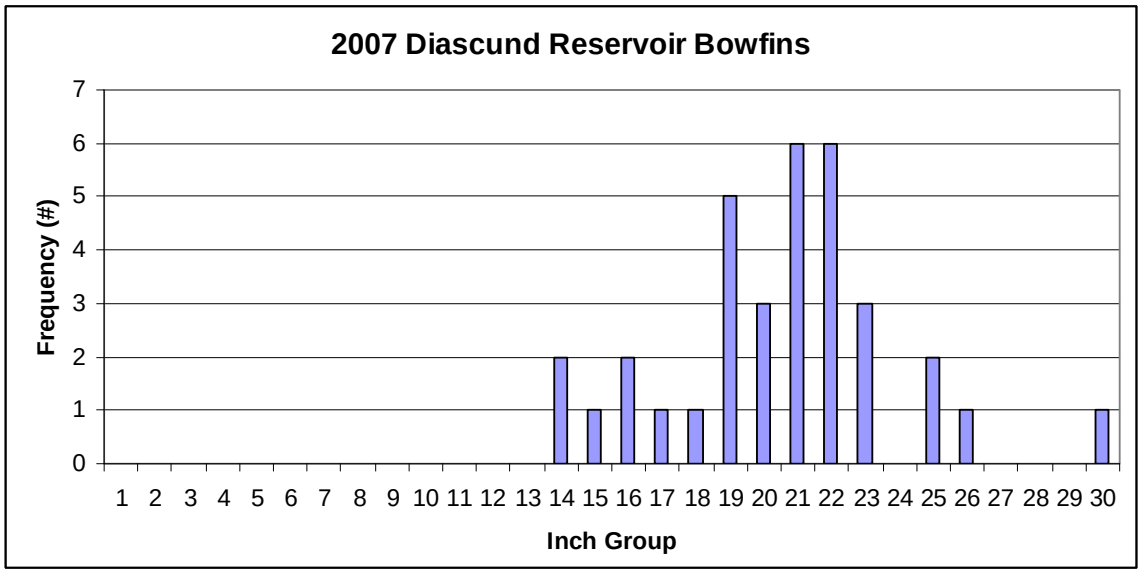
Figure 5. Length frequency distribution of black crappies collected from the trap net sampling of Diascund Reservoir on March 28-29, 2007. (N = 39, CPUE 3.9/net night)



The chain pickerel population offers some diversity to the fishery and will provide some fishing action when the bass are not cooperating. A total of 52 chain pickerel were collected for a CPUE of 26/hr. This catch rate showed a major increase from the 2006 sample (CPUE = 10/hr). The 2007 size distribution ranged from 6 to 23 inches. Due the abundance of juvenile pickerel in the 8 to 12 inch range, the average-sized chain pickerel measured 13.6 inches. Twenty of the chain pickerel measured greater than 16 inches in length. The largest chain pickerel measured 23 inches.

The bowfin population was represented with a greater abundance than past samples. The collection of 34 bowfins for a CPUE of 17/hr is the highest catch rate on record for Diascund Reservoir electrofishing surveys. The 2006 sample revealed 19 bowfins for a CPUE of 9.5/hr. The 2007 sample contained 19 bowfins that were 21 inches or larger in length. The largest bowfin measured an impressive 30.3 inches and weighed 11.8 pounds. The possibility exists for anglers to catch a bowfin while fishing Diascund Reservoir. There is also a chance that they might hook into one of the larger bowfins greater than 10 pounds.

Figure 6. Length frequency distribution of bowfins collected from the electrofishing survey of Diascund Reservoir on April 2, 2007 (N = 34, CPUE = 17/hr)



A total of 71 yellow perch were collected during two of the electrofishing runs. The CPUE of 106.5/hr is a major improvement from the 2006 survey (CPUE = 38.7/hr). The size distributions from both years were very similar with the majority of perch in the 3.5 to 6 inch range. The largest yellow perch measured only 7.6 inches. The trap net survey was able to collect only 2 yellow perch. The CPUE of 0.2 perch /net night is much lower than the 2006 trap net survey (CPUE: 5.85 fish/net night).

The redear sunfish population appeared to be in decent shape and showed signs of improvement. A total of 63 redear sunfish were collected for a CPUE of 94.5/hr. This catch rate is much higher than the 2006 sample (CPUE = 45.3/hr). The 2007 size distribution consisted of a large proportion of fish in the 6 to 9 inch range. The sample

revealed the average sized redear sunfish to be 6.3 inches in length. The trap net sampling collected an additional 21 redear sunfish that ranged in size from 3 to 11 inches.

The remaining 11 species of fish collected during the electrofishing survey were brown and yellow bullheads, common carp, creek chubsucker, American eel, flier, longnose gar, white perch, pumpkinseed sunfish, golden shiner and warmouth. These species were collected in limited abundance and will provide some diversity to the fishery.

The trap net survey collected a total of 18 species. Fish diversity was similar to species collected during the electrofishing survey. A variety of the major game fish species have been covered in the text of this report. The remaining species caught in low abundance were: largemouth bass, brown and yellow bullheads, creek chubsucker, American eel, flier, margined madtom, eastern silvery minnow, white perch, pumpkinseed sunfish, chain pickerel, warmouth, golden shiner, eastern silvery minnows and bluespotted sunfish. Due to the warm water temperatures, the second night of the trap net survey was not conducted.

Sample Summary

The electrofishing and trap net surveys of Diascund Reservoir showed a diverse fishery with a combination of 21 species represented. The reservoir provides some decent bass fishing. The electrofishing sample revealed a size structure consisting of numerous bass in the 11 to 19 inch range. These fish will provide the majority of the action for bass anglers fishing the reservoir. The overall catch rate of largemouth bass was a very impressive 86.5 bass/hr. A total of 71 bass were 15 inches or greater in length.

The bluegill and yellow perch fishery is primarily based on small fish less than 6 inches in length. The electrofishing of black crappies was spotty, but the catch rate showed an improvement from the 2006 survey. The reservoir provides some action for anglers that enjoy catching chain pickerel and bowfin. The electrofishing survey collected a total of 52 chain pickerel that ranged in size up to 23 inches. The catch rate of bowfins increased with a good number of fish in the 19 to 23 inch range. A citation-sized bowfin of 30.3 inches (11.8 pounds) was collected. The reservoir produces some nice redear sunfish in the 6 to 8 inch range. The reservoir produced a variety of citations in 2007 with a total of 19 citations reported. This total consisted of 9 black crappie, 5 yellow perch, 3 largemouth bass, 1 chain pickerel and 1 longnose gar. Diascund Reservoir provides an assortment of fishing opportunities. It just depends upon which species of fish you plan to target.